

WHAT IS CLAIMED IS:

1 1. A protective cap for adhesion to a substrate, the cap comprising:
2 a substantially flat base sheet;
3 a dome extending outwardly from an obverse side of the base sheet and
4 forming a cavity in the opposite side of the base sheet, the cavity sized for substantially
5 encapsulating a connector;
6 a semi-tubular shield extending outwardly from one side of the base sheet
7 and defining a channel in the opposite side of the base sheet extending from the cavity
8 toward the periphery of the base sheet; and
9 an integrated primer layer comprising a pressure-sensitive adhesive and
10 attached to the reverse side of the base sheet for application to the substrate.

1 2. The cap of claim 1 in which the primer layer comprises a polyolefin
2 material and synthetic elastomers.

1 3. The cap of claim 1 in which the primer layer comprises thermoplastic
2 elastomers and synthetic resins.

1 4. The cap of claim 1 in which the primer layer is a material selected from
2 the group containing polyolefin and synthetic elastomers.

1 5. The cap of claim 1 in which the primer layer has a service temperature of
2 between about -30 and 150 degrees F (-35 to 66 degrees C).

1 6. The cap of claim 1 in which the primer layer has an application
2 temperature of at least about -10 degrees F (-23 degrees C).

1 7. The cap of claim 1 in which the primer layer has a total thickness from
2 between about 20 and 60 mils (1 and 1.52 mm).

1 8. The cap of claim 1 in which the primer layer is elastically deformable to
2 about a 0.5 in radius at about -40 F (15.7 radius at -28.9 C).

1 9. The cap of claim 1 in which the primer layer exhibits a dielectric strength
2 of at least about 15 kV.

1 10. The cap of claim 1 in which the primer layer exhibits a resistivity of at
2 least about 10^8 megohms.

1 11. The cap of claim 1 wherein the primer layer absorbs less than about 0.05
2 percent water, by weight of the primer layer.

1 12. The cap of claim 1 in which the base sheet comprises substantially linear
2 perforations for improved flexibility.

1 13. The cap of claim 1 wherein the cavity contains a yieldable insulating
2 liquid compound conforming around the connector.

1 14. The cap of claim 1 further comprising at least one release liner attached
2 thereto, extending along the obverse side of the base.

1 15. A protective cap for a connector adapted for adhesion to a substrate, the
2 cap comprising:
3 a planar base sheet;
4 an igloo-shaped dome extending outwardly from an obverse side of the
5 base sheet and forming a cavity in the opposite side of the base sheet, the cavity sized for
6 encapsulating the metal connector;
7 a semi-tubular shield extending outwardly from one side of the base sheet
8 and defining a channel in the opposite side of the base sheet extending from the cavity
9 toward the periphery of the base sheet, the shield sized for substantially encapsulating a
10 lead extending from the connector;
11 an integrated primer layer comprising a pressure-sensitive adhesive and
12 attached to the reverse side of the base sheet for application to the substrate; and
13 an adhesive layer having at least one release line attached thereto,
14 extending along the obverse side of the base.

1 16. The cap of claim 1 in which the primer layer is
2 substantially cathodic disbondment resistant.

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1 17. A method for protecting a wire lead extending from a substrate, the
2 method comprising:

3 providing a protective cap comprising a substantially flat
4 base sheet and an integrated primer layer along a lower surface of the sheet, the primer
5 layer including a pressure-sensitive adhesive protected by a release liner;

6 positioning the protective cap proximate the wire lead;

7 removing the release liner to expose the pressure-sensitive
8 adhesive; and

9 applying the protective cap to the wire lead such that at
10 least part of the lead penetrates the integrated primer layer.

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1 18. The method of claim 17 in which the base sheet includes substantially
2 linear perforations for improved flexibility and further comprising bending the protective
3 cap about the substrate along at least the perforations.